
PERSPECTIVE

Gauging Supply And Demand: The Challenging Quest To Predict The Future Physician Workforce

Because past predictions were so far off the mark, we need to understand why, before we can confidently predict the future supply of physicians.

by **Ralph Snyderman, George F. Sheldon, and Theresa A. Bischoff**

AS RECENTLY AS 1980 the Graduate Medical Education National Advisory Committee (GMENAC) attempted to convince the nation of an impending physician oversupply, but failed. However, subsequent analyses supporting GMENAC's predictions persuaded virtually all of the nation's medical organizations, including the Association of American Medical Colleges (AAMC), to sound alarms and adopt public positions advocating a decrease in the rate of physician supply. Now Richard Cooper and colleagues present a convincing argument to the contrary, predicting a serious, and growing, shortage of physicians. If nothing else, these conflicting reports make clear the extreme difficulty of projecting physician supply in the United States.

■ **GMENAC forecast.** Established in 1976 to advise the secretary of the Department of Health and Human Services about how well the projected supply of physicians would match expected requirements for physician services, GMENAC predicted in 1980 that the country would have an excess of approximately 145,000 physicians by the year 2000. However, GMENAC's report was widely criticized, largely because of perceived flaws in its mathematical modeling methods. As a result, neither the federal government nor the graduate medical education community accepted GMENAC's recommendations, and no

steps were taken to curb physician supply.

■ **HMO model.** In the early 1990s what was perceived as a more credible analysis came to virtually the same conclusion as GMENAC. Several physician workforce analysts began to use the physician staffing patterns of closed-panel health maintenance organizations (HMOs) as the basis for projecting future physician requirements. These analysts argued that HMOs had a clear incentive to engage only the number of physicians required to meet the needs of their enrolled populations. Accordingly, they posited that HMO physician staffing patterns could provide insight into the number of physicians necessary to meet the medical care needs of the nation as a whole.

The resulting studies indicated that the number of physicians per 100,000 enrollees in closed-panel HMOs was far fewer than the number of physicians per 100,000 persons in the population at large. Using these data, analysts projected that the country would have an excess of more than 150,000 physicians by the year 2000, a number quite similar to that projected by GMENAC in 1980. Thus, in the mid-1990s virtually all major medical organizations responded by issuing position statements asserting that the country was on the verge of a serious oversupply of physicians.

■ **Today's reality.** It is now 2002, and such predictions have clearly not material-

167

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ized. To the contrary, all available market indicators, limited as they are, suggest that a shortage of physicians, particularly of specialty physicians, may well exist in some regions of the country. The conclusion seems inescapable that the projections of oversupply made in 1980 by GMENAC and those made in the early 1990s using HMO staffing patterns were seriously in error.

Indeed, some analysts, including Cooper, are now predicting that a general and sizable undersupply of physicians will emerge over the next couple of decades. This projection is based on the reasonable assumption that the demand for medical services will continue to increase along historical trend lines, while the size of the physician workforce relative to the population will actually decline. Cooper and colleagues' "Trend Model," which compares the historical demand for physician services with projections of future trends affecting physician supply, is based on this premise.

Although an oversupply of physicians is certainly undesirable, an undersupply could have even more serious ramifications, potentially limiting access to health care dramatically. If the current growing demand for medical services outstrips the future supply of physicians, the medical profession—and society at large—will be faced with a daunting choice. Either the spectrum of services that physicians now provide will have to be contracted (with certain "physician" services being entrusted to nonphysician health care providers), or the supply of physicians will have to be increased. Cooper and colleagues point out that the former is already occurring.

■ **Toward a better understanding.** If future workforce projections are to be relied upon, we must gain a better understanding of why past predictions were so far off the mark. Among the likely explanations are the following: (1) Reliable information was (and is) lacking to predict how changes in medical

practice will affect physician productivity or retirement patterns; and (2) insufficient weight appears to have been given to the impact of economic growth on future demand for physician services, a relationship that Cooper and his colleagues have spent considerable time examining.

Determining whether or not the country is headed for a physician shortage depends, of course, on forecasting the balance between supply and demand. On the one hand, predicting the demand for medical services is fraught with uncertainty, although historical trends suggest continued growth. On the other hand, one can confidently predict that the size of the physician workforce relative to the population will not grow and may even fall if the current rate of production remains unchanged. Moreover,

as Cooper and colleagues suggest, physician productivity in the aggregate appears to be falling in response to such demographic changes as early retirement and the increasing proportion of female practitioners.

There is general agreement that given the failure of previous studies to accurately predict even short-term requirements for physicians, a much better understanding is needed about the dynamics affecting the adequacy of the physician workforce. We believe that a comprehensive review of the various factors that affect the demand for physician services, the productivity of the physician workforce, and the rate of supply of physicians and other health professionals is warranted. Indeed, the AAMC is in the planning stages of just such a comprehensive review. The four trends offered by Cooper and colleagues to gauge the adequacy of physician supply for at least the next two decades will be an important contribution to this effort.

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